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Docket No.: 600.1306
Date: November 6, 2006

In re application of: **HEINER PITZ et al.**
Serial No.: 10/813,937
Filed: March 31, 2004
For: **METHOD FOR DRYING A PRINTING INK ON A PRINTING SUBSTRATE IN A PRINTING PRESS, AND A PRINTING PRESS**


Sir:

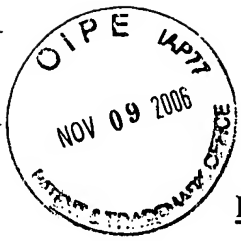
Transmitted herewith is a **Appeal Brief under 37 CFR 41.37 with Appendixes A, B, C (21 pages)** in the above-identified application.

- [X] Also transmitted herewith are:
[] Petition for extension under 37 C.F.R. 1.136
[X] Other: **Return Receipt Postcard**
- [] Check(s) in the amount of **\$0.00** is/are attached to cover:
[] Filing fee for additional claims under 37 C.F.R. 1.16
[] Petition fee for extension under 37 C.F.R. 1.136
[] Other:
- [X] The Assistant Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-0552.
- [X] Any filing fee under 37 C.F.R. 1.16 for the presentation of additional claims which are not paid by check submitted herewith.
- [X] Any patent application processing fees under 37 C.F.R. 1.17.
- [X] Any petition fees for extension under 37 C.F.R. 1.136 which are not paid by check submitted herewith, and it is hereby requested that this be a petition for an automatic extension of time under 37 CFR 1.136.


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I hereby certify that the documents referred to as attached therein and/or fee are being deposited with the United States Postal Service as "first class mail" with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on November 6, 2006.
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BY: 
Jennifer L. O'Connell



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: **Heiner PITZ et al.** Examiner: Kevin D. Williams
Serial No.: 10/813,937 Confirmation No.: 7474
Filing Date: March 31, 2004 Art Unit: 2854
Customer No.: 23280 Attorney Docket: 600.1306
Title: **METHOD FOR DRYING A PRINTING INK ON A PRINTING
SUBSTRATE IN A PRINTING PRESS, AND A PRINTING PRESS**

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November 6, 2006

APPELLANTS' BRIEF UNDER 37 C.F.R. §41.37

Sir:

Appellants submit this brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in support of their appeal of the Non-Final Rejection dated May 3, 2006 in this application. The statutory fee of \$500.00 for filing an appeal brief was paid on February 13, 2006.

I. REAL PARTY IN INTEREST

The real party in interest is Heidelberger Druckmaschinen AG, a corporation having a place of business in Heidelberg, Germany, and the assignee of the entire right, title and interest in the above-identified patent application. The invention was assigned to Heidelberger Druckmaschinen AG by an assignment originating from inventors Heiner Pitz, Axel Hauck, Werner Anweiler and Peter Hachmann. The most recent assignment was recorded on May 12, 2004 at reel 015314, frame 0910.

II. RELATED APPEALS AND INTERFERENCES

Appellants, their legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1 to 10 and 12 to 16 are pending. Claims 1, 4, 5, 9, 10 and 12 to 16 were rejected as per the Non-Final Office Action dated May 3, 2006. Claims 2, 3 and 6 to 8 were allowed. Claim 11 was canceled.

The rejection to claims 1, 4, 5, 9, 10 and 12 to 16 thus is appealed. A copy of appealed claims 1, 4, 5, 9, 10 and 12 to 16 is attached hereto as Appendix A.

IV. STATUS OF AMENDMENTS AFTER FINAL

No amendments to claims were filed after the non-final rejection. A Notice of Appeal was filed on September 1, 2006 and received by the U.S.P.T.O. on September 6, 2006.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 recites a method for drying a printing ink (e.g., 114 in Fig. 1, e.g., specification at paragraph [0044]) on a printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) in a printing press (e.g., 30 in Fig. 3, e.g., specification at paragraph [0046]) comprising the steps of : using at least one printing ink (e.g., 114 in Fig. 1, e.g., specification at paragraph [0044]) to print on the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) at a first position (e.g., 18 in Fig. 1, e.g., specification at paragraph [0044]) of a path (e.g., 16 in Fig. 1, e.g., specification at paragraph [0044]), the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) being moved along the path (e.g., 16 in Fig. 1, e.g., specification at paragraph [0044]) through the printing press (e.g., 30 in Fig. 3, e.g., specification at paragraph [0046]); and applying a treatment agent (e.g., 118 in Fig. 1, e.g., specification at paragraph [0044]) at a second position of the path (e.g., 16 in Fig. 1, e.g., specification at paragraph [0044]) on the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) to accelerate drying of the printing ink (e.g., 114 in Fig. 1, e.g., specification at paragraph [0044]) on the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]); the applying of the treatment agent (e.g., 118 in Fig. 1, e.g., specification at paragraph [0044]) at the second position (e.g., 124 in Fig. 1, e.g., specification at paragraph [0044]) occurring before the printing at the first position.

Independent claim 9 recites a printing press (e.g., 30 in Fig. 3, e.g., specification at paragraph [0046]) comprising: at least one print unit (e.g., 32 in Fig. 3, e.g., specification at paragraph [0046]) at a first position (e.g., 18 in Fig. 1, e.g., specification at paragraph [0044]) along a path (e.g., 16 in Fig. 1, e.g., specification at paragraph [0044]) of a printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) through the printing press (e.g., 30 in Fig. 3, e.g., specification at paragraph [0046]), and at least one drying device at a third position (e.g., 116 in Fig. 1, e.g., specification at paragraph [0044]) along the path (e.g., 16 in Fig. 1, e.g., specification at paragraph [0044]) downstream from the print unit (e.g., 32 in Fig. 3, e.g., specification at paragraph [0046]) for supplying energy to the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]); wherein at one further second position (e.g., 124 in Fig. 1, e.g., specification at paragraph [0044])

upstream from the drying device, the printing press (e.g., 30 in Fig. 3, e.g., specification at paragraph [0046]) includes a conditioning apparatus (e.g., 34 in Fig. 3, e.g., specification at paragraph [0046]) applying a treatment agent (e.g., 118 in Fig. 1, e.g., specification at paragraph [0044]) accelerating drying of the printing ink (e.g., 114 in Fig. 1, e.g., specification at paragraph [0044]) on the printing substrate (e.g., 14 in Fig. 1, e.g., specification at paragraph [0044]) at the third position (e.g., 116 in Fig. 1, e.g., specification at paragraph [0044]); and wherein the drying device includes at least one narrow-band radiant energy source (e.g., 10 in Fig. 1, e.g., specification at paragraph [0044]) emitting light of one wavelength in the near infrared region.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issue are whether claims 1 and 4 should be rejected under 35 U.S.C. § 103(a) as being unpatentable over Wilbur, U.S. Publication No. 2004/0189769 in view of Jung, U.S. Publication No. 2003/0066452. Whether claims 1 and 4 should be rejected under 35 U.S.C. §103(a) as being unpatentable over Jung in view of Broder, U.S. Patent No. 5,668,584. Whether claims 9 and 10 should be rejected under 35 U.S.C. §103(a) as being unpatentable over Jung in view of Bär, U.S. Patent No. 6,401,358. Whether claims 1 and 5 should be rejected under 35 U.S.C. §103(a) as being unpatentable over Doberenz, U.S. Publication No. 2003/0071863 in view of Jung. Whether claims 12 to 16 should be rejected under 35 U.S.C. §103(a) as being unpatentable over Jung in view of Bär as applied to claims 9 and 10 above and further in view of Rodi, U.S. Patent No. 5,115,741.

VII. ARGUMENTS

Rejections under 35 U.S.C. 103(a) over Wilbur, U.S. Publication No. 2004/0189769 in view of Jung, U.S. Publication No. 2003/0066452

Claims 1 and 4

Claims 1 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Wilbur, U.S. Publication No. 2004/0189769 in view of Jung, U.S. Publication No. 2003/0066452.

Wilbur discloses curing of sprayed or jetted ink by heat (See paragraph [0029] et seq.). Heating mechanisms 68a and 68b are adapted to dry the ink deposited upon printable medium 22. (See paragraph [0038]).

Jung discloses a method and apparatus for processing a printing ink in a rotary printing machine. Applicator 7 is after the printing position.

Claim 1 recites a method for drying a printing ink on a printing substrate in a printing press comprising the steps of :

using at least one printing ink to print on the printing substrate at a first position of a path, the printing substrate being moved along the path through the printing press; and

applying a treatment agent at a second position of the path on the printing substrate to accelerate drying of the printing ink on the printing substrate;

the applying of the treatment agent at the second position occurring before the printing at the first position.

As per the present specification, “application of a treatment agent... on the printing substrate” means that a physical substance is deposited on the printing substrate. Heat or radiation are not agents applied on a substrate, as clear from the specification at for example paragraphs [0003], [0004], [0014] and [0016].

Claim terms must be interpreted in light of the specification. General dictionary definition related to an “agent” do not trump what are clear specification teachings. “In other words, the treatment agent is used as a catalyst to accelerate the drying of the printing

ink on the printing substrate or to accelerate the absorption of energy, in particular as a direct catalyst, which reduces the energy absorption required for drying the printing ink.” See [0014] of the present specification.

The Examiner’s position is that energy itself can be a treatment agent, which directly contradicts the specification which identifies the treatment agent as separate from energy.

Wilbur does not disclose a treatment agent applied on a substrate. Any treatment application in Jung occurs after printing.

Moreover, there is no motivation to combine Wilbur with Jung, as the devices are different and there is no teaching in either Wilbur or Jung that Jung would increase the speed of drying as asserted. Furthermore, Wilbur refers to inkjet printing and Jung refers to offset printing.

Withdrawal of the rejection to claim 1 and its dependent claim 4 is respectfully requested.

Claim 4: Argued Separately

In addition with respect to claim 4, claim 4 further recites the “drying method as recited in claim 1 wherein the printing substrate is dried by the action of radiant energy at a chronologically later point in time from the using and applying steps at at least one third position of the path.”

If somehow the asserted applying step includes heating (which it does not), then there is no teaching in the prior art combination to then again dry at a “chronologically later point in time” as claimed in claim 4 since the ink would already be dry.

Claim 4 also is not really addressed at all as a separate additional limitation.

Withdrawal of the rejection to claim 4 in any event is respectfully requested.

Rejections under 35 U.S.C. 103(a) over Jung, in view of Broder, U.S. Patent No. 5,668,584

Claims 1 and 4

Broder recites “The print medium is fed to a print zone 56 beneath the area traversed by the cartridges 54 and over a print screen 66 which provides a means of supporting the medium at the print position. The screen 66 further allows efficient transfer of radiant and convective energy from the print heater cavity 71 to the print medium as well as providing a safety barrier by limiting access to the inside of the reflector 70.” (See col. 3 lines 49-55).

Claim 1 of the present application recites a method for drying a printing ink on a printing substrate in a printing press comprising the steps of :

using at least one printing ink to print on the printing substrate at a first position of a path, the printing substrate being moved along the path through the printing press; and

applying a treatment agent at a second position of the path on the printing substrate to accelerate drying of the printing ink on the printing substrate ;

the applying of the treatment agent at the second position occurring before the printing at the first position.

Broder does not disclose “applying a treatment agent.” A screen allowing efficient transfer of radiant and convective energy is not “applying a treatment agent” as defined in the present application. The screen 66 supports the print medium as it is driven through the printer media path. Radiant and convective energy are not “treatment agents” as defined in the present application.

Moreover, there is no motivation to combine Broder with Jung, as the devices are different. Broder refers to inkjet printing and Jung refers to offset printing.

Claim 4: Argued Separately

Withdrawal of the rejection to claim 1 and its dependent claim 4 is respectfully requested.

Rejections under 35 U.S.C. 103(a) over Jung in view of Bär, U.S. Patent No. 6,401, 358

Claims 9 and 10

Claims 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jung in view of Bär, U.S. Patent No. 6,401, 358.

Bär recites “if the moisture component of the substance to be dried is water, the incident electromagnetic radiation has a spectral intensity maximum in the near infrared, in particular in the wavelength range 0.8 to 2.0 μm .” “In the specified wavelength range there are several absorption bands of water.” (See col. 2 lines 53-63).

Claim 9 recites a printing press comprising:

at least one print unit at a first position along a path of a printing substrate through the printing press, and

at least one drying device at a third position along the path downstream from the print unit for supplying energy to the printing substrate;

wherein at one further second position upstream from the drying device, the printing press includes a conditioning apparatus applying a treatment agent accelerating drying of the printing ink on the printing substrate at the third position; and

wherein the drying device includes at least one narrow-band radiant energy source emitting light of one wavelength in the near infrared region.

Jung does not disclose a conditioning apparatus including a “narrow-band radiant energy source emitting light of one wavelength.

Bär does not show or teach a “narrow-band radiant energy source emitting light of one wavelength.” Bär uses a halogen line-source to emit radiation on the printing ink. (See col. 6 lines 28-34). Bär does not show or teach a “narrow-band radiant energy source” as claimed. Moreover, the “specified wavelength range” in Bär having “several absorption bands” is not “light of one wavelength” as claimed in the present application.

Withdrawal of the rejection to claim 9 and its dependent claim 10 is respectfully requested.

Rejections under 35 U.S.C. 103(a) over Doberenz, U.S. Publication No. 2003/0071863 in view of Jung

Claims 1 and 5

Claims 1 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Doberenz, U.S. Publication No. 2003/0071863 in view of Jung.

Doberenz is directed to an ink jet printing pen in which a chemical dispenser 36 such that the “chemical is dispensed just before the ink, causing the ink to dry on contact.” (See paragraph [0028]).

Claim 1 recites a method for drying a printing ink on a printing substrate in a printing press comprising the steps of :

using at least one printing ink to print on the printing substrate at a first position of a path, the printing substrate being moved along the path through the printing press; and

applying a treatment agent at a second position of the path on the printing substrate to accelerate drying of the printing ink on the printing substrate ;

the applying of the treatment agent at the second position occurring before the printing at the first position.

It is not clear from Doberenz that the chemical does not contact the ink in the air or before printing, and thus there is not clear disclosure of “applying a treatment agent ... before the printing” as claimed.

In addition, the printing substrate is not moved in Doberenz during this process, ***but rather the pen is moved.*** (See paragraphs [0018] and [0019]). Doberenz thus does not teach or disclose “the printing substrate being moved along the path through the printing press”, or applying a treatment agent at a “second position of the path”.

There also is no printing press in Doberenz.

There also would have been no motivation or desire to combine a pen-based printing system where the pen must be moved over a 2-D stationary image with the printing device of Jung. These are completely different types of printing devices and it is respectfully submitted that using a hand-held pen with the printing press of Jung would be dangerous and not obvious to one of skill in the art. Moreover, the movement of a sheet would make the pen of Doberenz difficult to use in any printing press, as many sweeps are needed. “This may include many subsequent passes over the previously printed pixels, as missed pixels are printed.” (See paragraph [0027]).

Withdrawal of the rejection to claim 1 and its dependent claim 5 is respectfully requested.

Claim 5 Argued Separately

With further respect to claim 5, claim 5 further recites the drying method as recited in claim 1 wherein the treatment agent includes a siccative or an alkaline solution, or a binding agent.

Neither Doberenz nor Jung teach this limitation and withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. 103(a) over Jung in view of Bär as and further in view of Rodi, U.S. Patent No. 5,115,741

Claims 12 to 16

Claims 12 to 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jung in view of Bär as applied to claims 9 and 10 above and further in view of Rodi, U.S. Patent No. 5,115,741.

Rodi discloses several laser tubes in a laser tube array. Each of the lasers is capable of generating a laser beam of a given wavelength. The laser beams of varying wavelengths are fed to the individual printing units via a plurality of fiber-optics cables. (See col. 5 lines 12-20). Rodi further discloses “a radiation device having means for generating radiation having a wavelength which lies within the ultraviolet range.” (See col. 2 lines 60-62).

With respect to claim 12, claim 12 recites “the printing press as recited in claim 9 wherein the narrow-band radiant energy source is a laser light source.” However, the lasers in Rodi are in the UV range not the infrared as in claim 9, and thus teach away from the use of narrow band IR sources as claimed in claim 12. Claim 13 also depends from claim 12. Claims 14 and 16 depend from claim 9 and claim 15 depends from claim 14. Thus the ultraviolet lasers in Rodi teach away from the “near infrared region” in claim 9.

In addition, there is absolutely no teaching or motivation in any of the prior art to use the lasers of Rodi to modify Jung or Bär. The asserted motivation is “to provide sufficient heat.” Jung however apparently provides sufficient heat: why is a new heat source needed, other than the present invention is being used for hindsight.

Claims 14 to 16: Argued separately

Claims 14 to 16 claim a plurality of radiant energy sources.

There is absolutely no teaching or motivation in any of the prior art to use the lasers of Rodi to modify Jung or Wilbur. The asserted motivation is “to provide sufficient heat.” Jung however apparently provides sufficient heat: why is a new heat source needed, other than the present invention is being used for hindsight.

Withdrawal of the rejection to claims 14 to 16 is respectfully requested for this reason.


In view of the comments above, withdrawal of the rejections to claims 12 to 16 is respectfully requested.

VIII. CONCLUSION

It is respectfully submitted that the application is in condition for allowance. Favorable consideration of this appeal brief is respectfully requested.

Respectfully submitted,

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APPENDIX A:

PENDING CLAIMS 1, 4, 5, 9, 10 and 12 to 16 of
U.S. APPLICATION SERIAL NO. 10/813,837

Claim 1 (previously presented): A method for drying a printing ink on a printing substrate in a printing press comprising the steps of :

using at least one printing ink to print on the printing substrate at a first position of a path, the printing substrate being moved along the path through the printing press; and

applying a treatment agent at a second position of the path on the printing substrate to accelerate drying of the printing ink on the printing substrate ;

the applying of the treatment agent at the second position occurring before the printing at the first position.

Claim 4 (original): The drying method as recited in claim 1 wherein the printing substrate is dried by the action of radiant energy at a chronologically later point in time from the using and applying steps at at least one third position of the path.

Claim 5 (original): The drying method as recited in claim 1 wherein the treatment agent includes a siccative or an alkaline solution, or a binding agent.

Claim 9 (previously presented): A printing press comprising:

at least one print unit at a first position along a path of a printing substrate through the printing press, and

at least one drying device at a third position along the path downstream from the print unit for supplying energy to the printing substrate;

wherein at one further second position upstream from the drying device, the printing press includes a conditioning apparatus applying a treatment agent accelerating drying of the printing ink on the printing substrate at the third position; and

wherein the drying device includes at least one narrow-band radiant energy source emitting light of one wavelength in the near infrared region.

Claim 10 (original): The printing press as recited in claim 9 wherein the conditioning apparatus is designed to allow an application of the treatment agent from both sides onto the printing substrate.

Claim 12 (previously presented): The printing press as recited in claim 9 wherein the narrow-band radiant energy source is a laser light source.

Claim 13 (original): The printing press as recited in claim 12 wherein the laser light source is a semiconductor laser, a gas laser or a solid-state laser.

Claim 14 (original): The printing press as recited in claim 9 wherein the drying device has a plurality of radiant energy sources arranged in a one-dimensional field, a two-dimensional field, or a three-dimensional field, with light striking the printing substrate at a number of positions.

Claim 15 (original): The printing press as recited in claim 14 wherein the light incident to the printing substrate at one position is controllable in its intensity and exposure duration for each radiant energy source independently of the other radiant energy sources.

Claim 16 (previously presented): The printing press as recited in claim 9 wherein the drying device includes at least two radiant energy sources and the light from the at least two radiant energy sources is incident to the printing substrate at one position.

APPENDIX B

Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.

APPENDIX C

Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in “2. RELATED APPEALS AND INTERFERENCES” of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.